Furman Magazine

Volume 61
Issue 2 *Fall 2018*

Article 19

9-1-2018

It All Adds Up

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Faculty, staff and alumni collaborate to offer students exclusive internships in ocular oncology

Matt Wilson '86, professor of ophthalmology at the University of Tennessee and the St. Jude chair in pediatric ophthalmology, was instrumental in creating medical internships for three Furman students.

COURTESY OF ST. JUDE CHILDREN'S RESEARCH HOSPITAL

IN THE MEDICAL FIELD

a good many decisions can be determined by number.

From fevers to blood cell count, blood pressure to cholesterol, numbers tell us what's measuring high or low, what's "good" or "bad," and what's worth worrying over or celebrating. We rely upon these numbers to steer us to vital decisions that many times can determine major lifestyle changes such as beginning a weight loss effort, using a new medication or changing a habit. For these reasons, medically speaking, numbers can hold a lot of power.

But numbers can also be deceiving.

When she was a senior, neuroscience major **Madison Ritter '17** applied for St. Jude Children's Research Hospital's Pediatric Oncology Education program. The program denied her because of a GPA requirement that Ritter missed by a percentage of a point. To the admission committee at St. Jude, Ritter didn't meet the requirements, so she couldn't be considered for the program; end of story. But Susan Ybarra, associate director for Furman's Institute for the Advancement of Community Health, knew the facts behind that number: Not only was Ritter hardworking, determined and intelligent, but she was also a student at one of the more challenging liberal arts and sciences universities in the country.

Ybarra called **Dr. Matthew Wilson '86**, professor of ophthalmology at the University of Tennessee and the St. Jude chair in pediatric ophthalmology. Wilson specializes in ocular oncology, the diagnosis and treatment of eye cancer. He also is an active researcher and has developed global programs for the treatment of these rare cancers.

"Matt and I met when he visited Furman one time. During that visit, he made it very clear that he wanted to help and be connected with students in any way he could," explains Ybarra. "So after learning that Maddie didn't get into the program, I shot him a quick email. I just asked for his advice. I told him that she planned on reapplying for the program, but I wondered if he had any other suggestions for her path.

"Matt quickly wrote back, 'Send Maddie to me this summer. I'll pay her. I want her in my lab,'" says Ybarra.

In a matter of several hours, the two had a plan for Ritter.

THE FIRST TWO

Ritter went on to shadow Wilson in his adult uveal melanoma clinic at the Hamilton Eye Institute and during his examination of retinoblastoma children at St. Jude Children's Research Hospital. She also conducted research for her senior thesis with Dr. Vanessa Morales-Tirado, Wilson's collaborator and principal investigator in the ocular oncology translation research laboratory at the University of Tennessee Health Science Center.

"Maddie was a great student," says Wilson. "Coming from Furman, I knew she would be," he says. "That's part of the disparity between some Furman students and other potential medical students. Some Furman students may not test the best, but they can think better than any top scorer."

After that summer, Ritter was accepted into the University of South Carolina School of Medicine in Greenville. And Wilson? He gave Ybarra a call.

"He said, 'Who's next? I want another one," remembers Ybarra, laughing.

So next was **Ansley Ulmer '18,** another neuroscience major who conducted her thesis based on work she did with Wilson.

"I began to see a pattern in the students that we were sending to Matt," explains Ybarra. "They were all neuroscience majors who had completed research in biology professor Victoria Turgeon's lab. It was the perfect background to the professional experience with Matt and the other physicians."

"They take what they have learned at Furman and expand on it here," says Wilson. "Students learn to work in a professional lab setting while also shadowing me in my clinics, so they're able to see the interplay between clinic and lab."

AND THEN THERE WERE THREE

The second semester of her senior year, **Michala Burges '17** participated in a global health class with health sciences professor Meghan Slining, where she really discovered her passion for public health. Meanwhile, she had applied to medical school with the hopes of starting that

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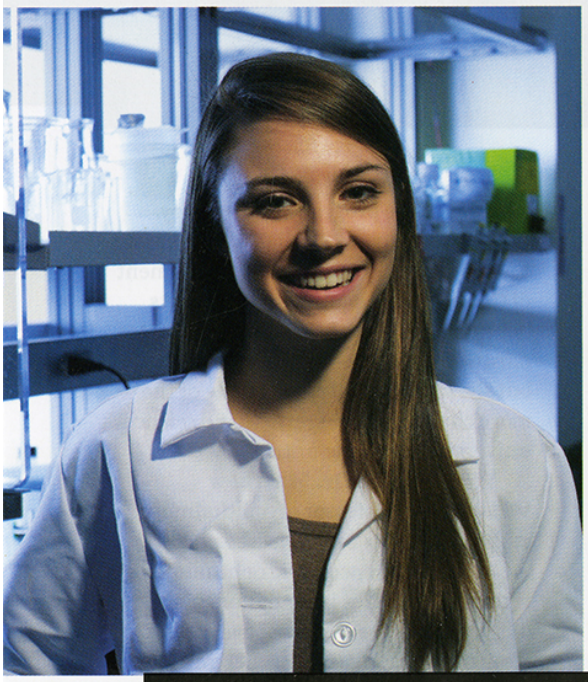

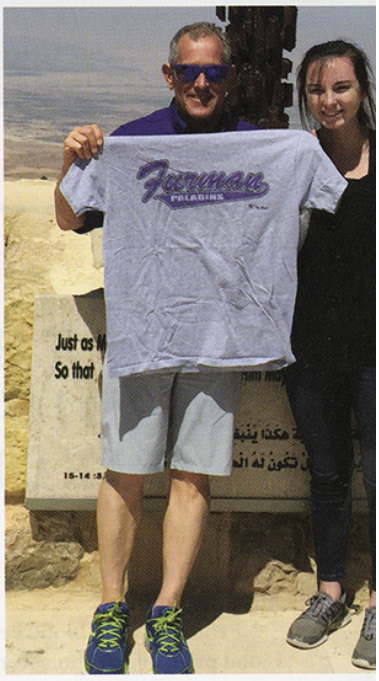

Madison Ritter '07, Ansley Ulmer '18 and Dr. Wilson with **Michala Burges '17**

Amman, Jordan, site of the Pediatric Oncology of the East and Mediterranean (POEM) group conference, where **Michala Burges '17** presented findings from her retinoblastoma capacity assessment survey for the region.

fall. However, the schools answered that her GPA wasn't high enough for fall entry.

"At first, I was devastated," says Burges. "It didn't seem fair because I had worked so hard at Furman."

But then Burges received an email from Ybarra about an internship opening with Wilson.

"The email contained the description of the position, and it sounded like the perfect job for me," says Burges. "It involved shadowing Dr. Wilson, as well as helping to build the retinoblastoma program in the Department of Global Pediatric Medicine at St. Jude."

However, there was one (major) piece of the puzzle that Burges didn't know much about – retinoblastoma, which is what she would be tasked to study.

According to Wilson, St. Jude had just revamped its International Outreach Program into the Department of Global Pediatric Medicine. The mission of St. Jude Global was simple: build capacity for low- and middle-income countries to care for their pediatric cancer patients. Considering 80 percent of the world's children live in these countries, the need to care for them is enormous. The success of the retinoblastoma program at St. Jude made it a priority project for Global.

JEREMY FLEMING | COURTESY OF ST. JUDE CHILDREN'S RESEARCH HOSPITAL

Retinoblastoma, a cancer of the retina in the eye, is usually diagnosed before a child is three years old. Left untreated, retinoblastoma can spread throughout the eye, optic nerve, and brain, as well as to the bones and bone marrow. Caught early, the cancer is treatable, with greater than a 90 percent survival rate. However, according to Wilson, middle and lower income countries lack resources to diagnosis retinoblastoma early when it is still contained to the eye. As a result, children present late with advanced disease that has spread elsewhere.

Metastatic retinoblastoma has a very poor survival rate even in developed countries. Of the 8,000 cases in the world, 80 percent occur in middle- or low-income countries. Wilson would task Burges with assessing the capacity for these countries to treat the retinoblastoma, as well as devising recommendations to better support these areas.

"After being accepted into the program, I had three months to move to Memphis and learn all I could about retinoblastoma," says Burges. "I read countless articles and watched all of Dr. Wilson's seminars. I studied everything I could find that he had published on the issue; I wanted to be prepared when I started."

KEEPING A COUNT

And prepared she was. Burges began by contributing to the education capacity for the disease, publishing educational pieces online. She then devised a survey that would be distributed to these lower-tier countries to assess their capability to diagnose and treat retinoblastoma.

"Michala really took the Middle East by storm," says Wilson. "After researching and writing the survey, she then gathered the results and came up with an itemized budget to help build the capacity in that area. The accomplishments we made in the Middle East would not have been possible without her. I didn't have the time or bandwidth to handle it, and if she wasn't here, we'd probably all still be spinning our wheels.

"What I appreciate about Michala – about all of the Furman students I've worked with – is that you give them a direction, you give them a little guidance, you come back to check in, and it's done," says Wilson. "These students' ability to critically think, analyze and produce a meaningful product is astounding."

NOT JUST A NUMBER

After Burges presented her findings to Wilson, he suggested that she accompany him and some of his fellow physicians to Jordan to share her research with many of the physicians she'd been communicating with regarding the capacity project.

"I was blown away to have that opportunity," says Burges. "It was very humbling. I stood in front of a room of people who embody exactly who I want to be one day, and I shared with them what I had learned over the past few months.

"After not getting into medical school, this experience helped to reaffirm that I could do this. I could still have a future here. I felt like I had made a meaningful contribution to the field before even getting a medical degree. How many students straight out of undergrad can say that?"

"When Susan first called me to help with internships, I didn't know how it would all develop," says Wilson. "But now, I couldn't be happier. I took the gamble, and it has paid dividends. It's exceedingly gratifying to see the results."